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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/567,107

05/03/2006

Motonori Yamamoto

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EXAMINER

FANG, SHANE

ART UNIT

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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/567,107	<b>Applicant(s)</b> YAMAMOTO ET AL.	
	<b>Examiner</b> SHANE FANG	<b>Art Unit</b> 4131	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 05/03/2006.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)            | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. _____                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>05/03/2006</u> .  | 6) <input type="checkbox"/> Other: _____                          |

## DETAILED ACTION

### *Specification*

1. The use of the trademark such as **EcoPIA®** on page 7, line 33 of the **specification** has been noted in various locations in the specification. It should be capitalized wherever it appears and be accompanied by the generic terminology. Although the use of trademarks is permissible in patent applications, the proprietary nature of the marks should be respected and every effort made to prevent their use in any manner which might adversely affect their validity as trademarks. Correction is required.

### *Claim Rejections - 35 USC § 101*

2. The following is a quotation of the second paragraph of 35 U.S.C. 101:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

3. Claim 8 is rejected under 35 U.S.C. 101 because the claimed recitation of a use, without setting forth any steps involved in the process, results in an improper definition of a process, i.e., results in a claim which is not a proper process claim under 35 U.S.C. 101. See for example *Ex parte Dunki*, 153 USPQ 678 (Bd.App. 1967) and *Clinical Products, Ltd. v. Brenner*, 255 F. Supp. 131, 149 USPQ 475 (D.D.C. 1966).

### *Claim Rejections - 35 USC § 112*

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

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5. Claim 8 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 8 provides for the use of the biodegradable polyester mixtures, but, since the claim does not set forth any steps involved in the method/process, it is unclear what method/process applicant is intending to encompass. A claim is indefinite where it merely recites a use without any active, positive steps delimiting how this use is actually practiced.

***Claim Rejections - 35 USC § 103***

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of

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35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

8. Claim 1-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Warzelhan et al. (US Patent No. 6,018,004)** in view of **Hager et al. (US Patent No. 5,373,058)**.

As to Claim 1, 3, and 10, *Warzelhan et al.* discloses biodegradable polymer blends of polyester and starch (Abstract). *Warzelhan et al.* further teaches a blend of starch, a renewable raw materials, and polyester with a starch component at 42% by weight (Example 16). *Warzelhan et al.* fails to disclose incorporating glycidyl methacrylate and/or glycidyl acrylate into the biodegradable polymer blends.

*Hager et al.* discloses combining glycidyl acrylate with polyesters to improve the performance and reactivity of polyester (Col. 1, II 59-65). *Hager et al.* further teaches the making of mixture of polyesters and glycidyl acrylate with a glycidyl acrylate component at 6% by weight (Example 1).

As to Claim 2, *Warzelhan et al.* (Claim 1) further discloses a biodegradable polyester consisting essentially of a species with a structure recited in Claim 2.

As to Claim 4, 5, and Claim 11-15, the range of components i, ii, and iii recited in the claims covers the range of loading of polyester, renewable raw materials, and glycidyl acrylate as disclosed by *Warzelhan et al.* (Example 16) and *Hager et al.* (Example 1).

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As to Claim 9, *Warzelhan et al.* further teaches the making of moldings and fibers from biodegradable polyester mixture (Col. 10, ll 20-35) and biodegradable blends and films from mixture of polyester and starch (Example 1 and Example 16).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have incorporated disclosures of *Warzelhan et al.* and *Hager et al.* and employ the combination of renewable materials, biodegradable polyester, and glycidyl methacrylate and/or glycidyl acrylate to develop biodegradable polyester mixtures based on compositions recited in Claim 1-5 and 10-15 and moldings, blends, and fiber thereof, as recited in Claim 9. The suggestion/motivation would have been in order to provide optimal combination of renewable raw materials, biodegradable polyester, and glycidyl methacrylate or glycidyl acrylate.

As to Claim 6-7 and Claim 16-20, *Warzelhan et al.* teaches a mixing/reaction process of making a blend of starch and a polyester with a starch component at 33% by weight (Example 16). *Warzelhan et al.* fails to disclose mixing/reacting of biodegradable polyester and starch with glycidyl acrylate and/or glycidyl methacrylate.

*Hager et al.* teaches a mixing/reaction process of polyesters and glycidyl acrylate with a glycidyl acrylate component at 6% by weight (Example 1).

It is well known that free-radical initiator is used to initiate free-radical polymerization of reagents containing unsaturated groups such as glycidyl acrylate, glycidyl methacrylate, and lignin. It is well known that glycidyl groups

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can polymerize with monomers containing hydroxyl groups such as lignin, starch, and polyester commonly containing hydroxyl or acidic groups.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have incorporated disclosures of *Warzelhan et al.* and *Hager et al.* and employ to utilize the process of mixing/reaction, either of one step or separated steps, to produce the claimed biodegradable polyester mixture compositions via the processes recited in Claim 6-7 and 16-20.

### ***Conclusion***

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to SHANE FANG whose telephone number is (571)270-7378. The examiner can normally be reached on Mon.-Thurs. 8:00 am. to 6:30 p.m. EST..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Roy Sample can be reached on (271)272-1376. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/David R. Sample/  
Supervisory Patent Examiner  
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